AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A method for determining a concentration of glucose in at least one of an in-vitro and in-viva specimen containing body liquid, the method comprising:

arranging a first electrode at said specimen, wherein the first electrode is electrically insulated from the specimen by a cover layer, and wherein the first electrode is arranged on a first side of a electrically insulating substrate between the substrate and the cover layer;

applying a modulated electrical voltage to the first electrode for generating a modulated field in the specimen; and

measuring at least one parameter depending on a response of the specimen to the field and determining the concentration therefrom.

2. (Previously Presented) The method of claim 1 comprising the step of arranging a second electrode at said specimen, wherein the modulated electrical voltage is applied between the first and the second electrode.

3. (Previously Presented) The method of claim 2 wherein the second electrode is in electric contact with the body liquid in the specimen.

4. (Previously Presented) The method of claim 1 further comprising the step of measuring a temperature of the specimen and using the temperature to determine the concentration.

5. (Previously Presented) The method of claim 1 wherein the modulated electrical voltage is a sine voltage.

6. (Previously Presented) The method of claim 1 wherein the modulated electrical voltage has a frequency between 10 MHz and 2 GHz.

7. (Previously Presented) The method of claim 1 wherein the parameter depends on the electrical impedance at the first electrode.

8. (Previously Presented) The method of claim 1 wherein the response of the specimen is measured by measuring a signal reflected from the first electrode.

9. (Previously Presented) The method of claim 1 wherein an antenna electrode is arranged at the specimen in proximity to the first electrode and wherein the response of the specimen is measured by measuring a signal transmitted from the first electrode to the antenna electrode.

10. (Canceled)

11. (Previously Presented) The method of claim 1 wherein the specimen is a living body.

12. (Previously Presented) The method of claim 1 comprising the step of using calibration data to convert the parameter to the concentration.

13. (Previously Presented) The method of claim 1 wherein the first electrode forms part of a resonant circuit having a resonance frequency and wherein the resonant circuit is operated substantially at the resonance frequency.

14. (Previously Presented) The method of claim 13 wherein the resonant circuit is at least part of a tank circuit of an active oscillator and wherein the parameter is at least one of an amplitude and a frequency of a signal generated by the oscillator.

15. (Previously Presented) The method of claim 13 wherein the modulated voltage is frequency sweeped from a frequency below the resonance frequency to a frequency above the resonance frequency, and wherein the parameter is at least one of a signal reflected to the first electrode at the resonance frequency and transmitted to an antenna electrode at the resonance frequency.

16. (Previously Presented) A device for determining a concentration of glucose in at least one of an in-vitro and in-vivo specimen containing body liquid, the device comprising:

an electrically insulating substrate;

a first electrode covered by a cover layer of insulating material, wherein the first electrode is arranged on a first side of the substrate between the substrate and the cover layer;

a signal source connected to the first electrode and configured to apply a modulated electrical voltage to the first electrode to generate an electric field in the specimen;

a measuring circuit configured to measure at least one parameter depending on a response of the specimen to the field; and

a data processor configured to determine the concentration from the parameter.

17. (Previously Presented) The device of claim 16 comprising a holder for fixing the first electrode to a part of a body with the cover layer facing the body.

18. (Previously Presented) The device of claim 28 further comprising an electrically insulating substrate, wherein the first electrode is arranged on a first side of the substrate between the substrate and the cover layer.

19. (Previously Presented) The device of claim 16 further comprising a second electrode arranged on the substrate, wherein the signal source is connected to and configured to apply the modulated electrical voltage between the first and the second electrodes.

20. (Previously Presented) The device of claim 19, wherein the second electrode comprises a bottom electrode layer arranged on a second side of the substrate, said bottom electrode layer having a larger extension than said top electrode layer.

21. (Previously Presented) The device of claim 19, wherein the second electrode comprises a top electrode layer arranged on the first side of the substrate, said top electrode layer being arranged around at least part, in particular substantially all, of the first electrode.

22. (Previously Presented) The device of claim 16, wherein the first electrode is elongate having a width substantially smaller than a length.

23. (Currently amended) The device of claim 16 comprising a first and a second signal path between the signal source and the measuring circuit, wherein the first electrode [[in]] is arranged in the first signal path and a reference load is arranged in the second signal path, and wherein the measuring circuit is adapted to measure at least one of a relative amplitude and a phase of signals from the first and second signal paths.

24. (Previously Presented) The device of claim 16 wherein the first electrode is part of a capacitor of a resonant circuit-comprising the capacitor and an inductor connected to the signal source.

25. (Previously Presented) The device of claim 24 wherein the capacitor and the inductor are arranged in series.

26. (Previously Presented) The device of claim 24 wherein the measuring circuit is configured to measure a voltage over the resonant circuit.

27. (Previously Presented) The device of claim 24 further comprising an antenna electrode arranged in proximity to the first electrode, wherein the measuring circuit is adapted to measure a signal transmitted from the first electrode to the antenna electrode.

28. (Previously Presented) A device for determining a concentration of a substance in body liquid of a human body, the device comprising:

an elongate first electrode having a width substantially smaller than a length;

a holder for fixing the first electrode to at least one of an arm and a leg of a body with a longitudinal axis of the first electrode being substantially parallel to the at least one arm and leg;

a signal source connected to the first electrode applying a modulated electrical voltage to the first electrode for generating a modulated field in the specimen;

a measuring circuit for measuring at least one parameter depending on a response of the specimen to the field; and

a data processor determining the concentration from the parameter.

29. (Previously Presented) The device of claim 28 further comprising a ring electrode extending around the first electrode.

30. (Previously Presented) The device of claim 29 wherein the ring electrode is connected to a ground.

31. (Previously Presented) The device of claim 29 wherein the ring electrode surrounds a single strip electrode with the strip electrode forming the first electrode.

32. (Previously Presented) The method of claim 6 wherein the modulated electrical voltage has a frequency between 20 MHz and 70 MHz.